DOCUMENT RESUME

ED 302 922 EA 020 603

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TITLE	Conducting a Survey: The Dollars and Sense of It.
PUB DATE	Nov 88
NOTE	14p.; Paper presented at the Annual Meeting of the Mid-South Educational Resarch Association (17th, Louisville, KY, November 8-11, 1988).
PUB TYPE	Speeches/Conference Papers (150) -- Guides - Non-Classroom Use (055)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Costs; *Data Analysis; Educational Assessment; *Evaluation Methods; *Research Design; *Sampling; *Surveys

ABSTRACT

This paper helps researchers develop criteria for conducting surveys. Cost considerations frame the paper's suggestions. Specifically, the text advises that researchers consider the human and material resources needed, type of survey instrument, medium for conducting the survey (mail, telephone, personal interview, etc.), data analysis methodology, and report organization. (JAM)

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Conducting A Survey: The Dollar$ and Sense of It

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Training Session Presented at the meeting of the

Mid-South Educational Research Association, Louisville, Kentucky

November, 1988

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Conducting a Survey: The Dollar$ and Sense of It

When preparing to conduct a survey, there are authorities to provide step-by-step instructions on how to proceed. (See attached list of resources.) There are also articles reporting research studies (and meta analyses of research studies) which focus on one or more aspects of the survey process and its effect on return rate, reliability or validity of the information obtained, cost effectiveness, etc. This paper is not going to be a step-by-step guide to conducting a survey. It will deal with several aspects of a survey and cost considerations associated with them to aid researchers in making decisions when they decide to conduct their own surveys. The information may not be anything new to those who have been in the field for awhile and is directed primarily toward graduate students and those who have little background in survey research methodology.

Resources

When planning a survey, the researcher must take available resources into account when making the decisions regarding how the survey is to be done. Surveys are usually done by mail, over the telephone, or through personal interviews. Resources to be considered include people, money, and equipment; and the specific circumstances of a study may well differ from those of other researchers' investigations of the same topic as well as from those of other survey efforts of the same researcher. At all times the researcher must consider the purpose of the survey, what questions are to be answered, the need for a high response rate, and the length of time available in which to complete the study.

Mail, Telephone, Personal Interview

A major decision is whether to use a mail survey, a telephone survey, or a personal interview survey (or a mixture). The number of people available to help with the survey and the amount of time the researcher is willing to invest may influence this decision to a large extent. If there are no graduate assistants (and no

budget to pay them) or others involved in the research and plan to survey a fairly large number of people, the researcher may not want to invest heavily of his or her time in conducting telephone or personal interviews. The type of questions asked will also have some bearing on whether or not respondents can provide the needed information over the telephone. Some sensitive questions can best be approached over the telephone where the individual has a sense of anonymity. If the same questions were asked on a mail survey, the person would not respond. When seeking factual data that would have to be looked up, a mail survey is probably preferable.

Telephone Surveys

The quickest way to complete a study is probably through telephone contacts with the individuals. This is not necessarily the least expensive, however. If the subjects are out of the local calling zone, there will be long-distance charges. If the number of subjects is large, additional people will probably be needed to help with the calling. That also means providing training for them and monitoring them as they make the calls.

If the information is complex or would necessitate the subject's looking up some of the information, a telephone survey can be facilitated by sending an advance cover letter about the survey and when the calling will begin and including a copy of the questions to be asked. The information can be gathered ahead of time so that the participant is ready. It is also possible for the information to be left with a secretary who is more available that the original target of the survey.

Differences in time zones must be kept in mind when conducting a telephone survey. One survey of school superintendents found that the highest completion rates were on Mondays and Fridays, and from 12-1 and between 3 and 4 o'clock.

Calling is cheaper in off-hours if the subjects will be at the telephone numbers listed for them during those hours. The chance of reaching employed people (at

home telephone numbers) is usually better in evening hours anyway. Check to see if there is a low-cost long-distance calling plan that can be utilized. Some institutions have WATS lines for in-state calling and another form of low-cost service for out-of-state calls. Check to see if it would be possible to use institutional telephones and reimburse them for the calls (if it is not sponsored by the institution).

For calling, it is helpful to have more than one telephone line in the same room or general area, more than one caller available. When a party cannot come to the phone when called, control the return calling by stating that you will call back and ask for a good time to do so, rather than having that person return the call. This avoids having the person call back and receive a busy signal because the calling lines are all in use (and eventually give up). It is helpful to have callers with an accent that is not drastically different from that of people in the area being contacted. If there is information to be verified or that relates the current survey to a prior contact, this should be addressed first to give validity to the call.

Ask for the person by name if at all possible. When calling a specific individual and someone other than the subject provides the information or answers, record the name and title of that person (or relationship to the subject).

Questions should be formulated so that they do not invite long, open-ended responses. Remember that the researcher is paying for telephone time. Open-ended items can be taped and typed, which is costly and time-consuming. More directions can be built in with the questionnaires used for telephone and personal interviews than with mail questionnaires (skip, filter, etc.) because the potential respondent does not see the instrument itself.

Telephone surveys are now being done with the aid of the computer in random digit dialing and in actually asking the questions. However, those techniques do not fall within the scope of this paper.

Type Size and Style

When designing the questionnaire, use of a computer (like the Macintosh) can produce a master copy that closely resembles that prepared by typesetting. Type fonts can be changed, bold-face type used for emphasis, etc. Also, the width of the type faces vary considerably. A times font in 10 point is a compact font which has approximately 106 characters to a 6-inch line; an ordinary prestige elite typewritten line of 6 inches has 70 characters. People with failing eyesight need larger type, so questionnaires sent to the general population which may include many elderly people should be prepared in a size of type that is not reduced significantly.

Type can be reduced on many photocopy-type machines. If an instrument or any page of text is to be typed on a typewriter and then reduced, the margins on the paper can be expanded (even to inserting the page horizontally instead of vertically into the typewriter) so that the reduced version will make good use of the size of the page and not have exceptionally large margins on all sides as a result of the reduction. Reduction of the complete page by this method also causes vertical reduction so that the number of lines per page is increased and they are closer together. If the respondent is to type information, the spacing may no longer be consistent with that of a typewriter. Using a smaller font size (as mentioned in the preceding paragraph) does not increase the number of lines per page but does increase the amount of type that will fit on a line. Text that extends beyond a single line may require fewer lines with the reduced type font. Questionnaires in which most of the items on a line are short (questions and response options) and already fit on a single line will not be altered substantially in page requirements by going to a reduced type font.

It is preferable to minimize the number of times a piece of text is copied, however, because the type tends to become lighter with each reproduction (making

the master copy used for quantity duplication lighter and of poorer quality). The laser writer, as used with Macintosh computers, usually has an option for enlarging or reducing when the instrument is printed initially. Once the amount of change in size of type is determined, the reduction can be made when the instrument is printed by the laser printer, thus avoiding the need to reduce on the duplicating equipment.

Questionnaire Format - Booklet Versus Single Sheets; Postage

Questionnaires can be assembled in booklet style as well as in single sheets that are stapled in the corner. There may be less concern about participants' overlooking questions on the back of a page if a booklet format is used. Regular photocopy-type duplicating machines can usually accommodate legal-size sheets or 8 1/2 by 14 inches. Some of the more advanced machines can also collate, fold the sheets in two in the middle and saddle stitch them. If larger paper is used, such as 11 by 17 so that when folded the pages are 8 1/2 x 11, it may be preferable to have a professional make a plate and duplicate from that rather than xeroxing from the original. Problems in the machine's ability to feed the large paper can result in a lot of unusable paper. This presupposes that enough questionnaires will be used to justify the cost of obtaining such a service.

More information can be included on fewer pages if the back of the sheet is used. There is less chance that respondents will miss the back side if the questionnaire is assembled as a booklet rather than as separate sheets stapled in the corner. Check to see how many sheets (of the size planned for the questionnaire) can be returned without increasing postage. It is also possible to insert a sheet containing directions or code information needed for completing the questionnaire but which the participant need not return, thus decreasing the amount of material to be returned.

Reproduction

If the questionnaire is going to be duplicated by someone else, the researcher can make the paste-up or master copy so that the pages are ready to be duplicated or to have the photographic plate made. If the person responsible for reproducing the questionnaire has to make a paste-up copy to use as an original, there will be an additional charge. Marks for use in lining up copy can be made with a light blue pencil; such marks will not show when the questionnaire is duplicated. Attaching sheets or sections to the master copy is more easily done with a glue stick (which allows some shifting and leveling of the part being inserted or pasted down) than with tape. Transparent tape can be used and will not show when the instrument is duplicated. Some printers insist that all edges of attached inserts be securely fastened down, preferably with tape, but this can be done after the material is positioned with glue.

Cover letters can be reproduced onto letterhead stationary by simply placing the letterhead paper in the paper tray before copying. The master copy should not be typed or printed onto letterhead stationary but onto a plain piece of white paper with margins of the text adjusted to fit on letterhead stationary.

Color Coding

When different groups (such as principals and teachers, graduates of three different institutions or programs) are going to be surveyed with the same or similar instruments, it can be helpful in managing the survey to color code the questionnaires.

Trimming the Edges

Assembling the questionnaire as a booklet-with several sheets folded and stapled in the middle may result in the edges of some of the inner pages being wider than others and extending beyond them. If so, the printer will need to trim the outside edge so that all the edges are even. Data entry may also be easier using a

booklet style than single sheets because there is less paper shuffling and page turning.

Signatures

Personalizing mailings by having the cover letters hand signed can be done by having the signature written by someone other than the person whose name is actually being used. It is important that you try to be consistent. If one person signs the cover letters for the first half of the subjects, that person should sign subsequent correspondence as well, so that the signature remains the same.

Return Postage and Envelopes

It can be cost-effective to use business reply envelopes for people to return their completed questionnaires if a relatively low response rate is expected and their use does not appear to inhibit responding. .Business reply envelopes can be particularly advantageous if the return postage is expected to fluctuate because of additional pages that may be included by the respondent. If, however, a high response rate is anticipated, it will be cheaper to put postage stamps on the return envelopes because each business reply envelopes that is returned has an additional cost (in our case eight cents per envelope) beyond that of first-class mailing for processing. Also, if the researcher is using business reply envelopes that are pre-printed to be returned to a department or unit in the institution, it will save confusion if the envelopes are personalized by adding ATTN: Joe Jones, cc: Joe Jones, or perhaps even just the researchers initials (JKJ) in the lower left-hand corner of the envelope so that returns can be directed to the researcher upon delivery to the unit to which they are addressed. Talking with the person who sorts the mail can help determine what kind of identification should be added to speed the return of responses to the researcher.

There are different sizes of envelopes. If a size 10 (standard) envelope is used for mailing the questionnaire to the participant, check to see if a size 9 envelope,

which is only slightly smaller, will hold the completed questionnaire and can be used for the return mailing. The size 9 envelope can be inserted directly into the size 10 envelope; if both envelopes are the same size, the return envelope being inserted has to be folded in thirds. Investing in a rubber stamp carrying the return address can save time and energy in preparing return envelopes when business reply envelopes are not used.

Postcards

Postcards are sometimes used for follow-up reminders. Postcard messages can be printed by a xerox-type machine onto 8 1/2 x 11 inch card stock instead of paper. After duplication, the card stock is cut into the desired size. Purchasing prestamped postcards from the post office and then attempting to duplicate the message on them may result in a costly loss if the machine has difficulty feeding the postcards. If the message will fit onto the standard post card size, marking the outline of the postcard on the master copy and subsequently printing it onto the card stock can make it easier to cut the cards after duplicating. A message can be printed on the card stock in sizes larger than that of a standard postcard, but the postage required by cards of larger sizes becomes that of a letter rather than that of a postcard.

Stamps

When planning to use postage stamps for return or other mailings and the cost of the stamps can be paid by the institution, check ahead of time for the best procedure to use. It may be that the only way to acquire the stamps and have them reimbursed is to begin the process well in advance by obtaining a purchase order which will eventually allow the stamps to be obtained at the local post office or post office branch, which may be on the campus of the institution.

Using a university metering system for outgoing mail may permit assembling letters in stacks of 25 or so which are each held together by a rubber band. Envelopes for such first-class mailings that are going to be metered do not have to be sealed if

the envelopes are nested (each envelope lies between the envelope and flap of the one in front of it). This, again, may be dependent on the equipment available; consulting the individual responsible for outgoing mail can provide information regarding the most expedient methods unique to the researcher's situation.

Follow-ups

Use of an identification number or some type of coding on the questionnaires is essential so that follow-up mailings can be sent only to nonrespondents, thus avoiding the added expense of mailing reminders to those who have already responded.. If the ID number is on the envelope and respondents lose the return envelope and supply their own, the respondent cannot be identified. There are ways of coding invisibly if there is concern that respondents won't want to be identified and may obliterate or destroy the ID numbers. Destruction of identification numbers is not generally a problem, but it is appropriate to point out, in the cover letter or directions, the ID number and its function.

Timing of follow-up mailings can vary according to the population. Individuals in high positions may resent being bothered by follow-up mailings sent fairly rapidly, as recommended in some publications on survey research. Two recent surveys completed in which questionnaires were sent to deans and individuals in charge of schools, colleges, and departments of education in postsecondary institutions resulted in response rates over 75% when one follow-up mailing was sent after four weeks in one study and after five weeks in the other. In conducting follow-up studies of principals employing first-year graduates, one follow-up mailed after approximately one month has consistently resulted in return rates of over 80%.

Data Analysis

Mainframe Versus Microcomputer - Card Column Numbers

Decide how the data are to be analyzed when planning the survey and designing the questionnaire. If a mainframe computer is to be used and someone other than the researcher will be responsible for entering and/or analyzing the data, consult that individual when designing the questionnaire. It is not always necessary to copy the questionnaire responses from the questionnaires onto green coding sheets in order to get them entered into the computer. Designing the questionnaire for data entry directly from the questionnaire may involve,including card column numbers and numerically coding response categories on the questionnaire itself.

PC Data Entry

Another possibility available now is that of entering the data on a personal computer, such as an IBM PC or a Macintosh,and then transmitting the data file to a mainframe computer via KERMIT or MacTerminal or some other file transfer procedure. Secretaries can type in the data using their own word processing package without detailed knowledge of word processing needed by the VAX or DEC system on the mainframe. Remember that the statistical program being used will have a specific way to identify missing data. Be sure that the data are entered in a format that will be read correctly by the statistical program.

Optical-Scan Sheets

Also check into the possibility of using optical scan sheets if equipment to read them is available. Optical scan sheets can be custom designed so that they contain the questions as well as the response options, or the answers to the questions can be put on a standard or generic scan form if the responses fit the format. Standard forms are usually designed to accommodate some demographic information and multiple choice-type items with either four or five choices. It is crucial that there be a device available that can read the scan form being used.

Again, check on the cost. Having a custom designed form may be more costly than the research budget can stand unless there will be a large number of subjects or data are to be collected over several years. Optical scan sheets probably work best when items are multiple choice in which each response is selected from a fairly small number of response options; scan sheets may become unwieldy when responses are numeric (such as number completing each certification or licensure program, dollar amounts, individuals in various groups).

Check to see into what form the scanner will convert the data. One option is to convert information from scan forms onto magnetic tape, which can then be fed into the mainframe computer... If there are a lot of separate numbers (for responses), optical scan sheets may become unwieldy.

Scanning Completed Questionnaires

It is always a good idea to look over the completed questionnaires before data entry to detect ambiguous answers or answers that have been incorrectly marked. The researcher should make any judgment calls about what the respondent is saying; the person entering the data (whether a professional or a graduate student) should not have that responsibility.

Preparing the Report

Order and Organization

When preparing to describe the results, prepare tables first, then decide what data can more effectively be presented graphically. The actual numbers or percentages will be needed to prepare the graphs using microcomputer software programs such as Microsoft Chart or Cricket Graph which are not based on the raw data. Categories can be collapsed, if necessary;, but more specific information is frequently needed as a base. Items can be grouped by topic and/or logic and need not always appear in the order they occur on the questionnaire. Once the tables and figures are completed, the text can be written to describe them.

Conclusions

Each survey is an individual undertaking. While some guidelines can be set forth, the researcher must design the survey in light of existing conditions and limitations for that one, specific study. Availability of resources is a real constraint on any undertaking. Knowledge of what resources are or might be available can assist the researcher in designing a cost-effective survey.